LAND LABOR MANAGEMENT CAPITAL

FARM MANAGEMENT DIVISION

NOVA SCOTIA DEPARTMENT
OF
AGRICULTURE AND MARKETING

INVESTMENT LIMITS

1982

DAIRY

BORROWED CAPITAL LIMITS

- DAIRY -

ASSUMPTIONS:

1. GROSS RECEIPTS - Gross Receipts are made up of milk sales plus milk subsidies and in addition, $222. per cow. The additional $222. per cow comprise livestock sales, crop sales, and one-third of the miscellaneous sales. Gross Receipts were calculated at various production levels for the tables in this booklet.

2. EXPENSES - Expenses to produce milk were estimated to be 76.3 percent of Gross Receipts. Expenses included all direct operating costs plus repairs, taxes and insurance. It should be noted that the Nova Scotia Dairy Farm Business Summaries for the years 1977-1981 inclusive were used as a basis for the above calculations.

3. LABOR - Operator Labor was estimated to be $180. per cow. This amount represents unpaid operator labor and must be considered a very minimum living allowance.

4. FORMULA - The following formula was then used to calculate a Residual for interest and principal repayment.

   GROSS RECEIPTS - EXPENSES - LABOR = RESIDUAL FOR INTEREST AND LOAN REPAYMENT

5. REPAYMENT-CAPITALIZATION RATE - Although the name assigned may be somewhat out of context from what is generally understood to be Capitalization Rate, what is visualized is to calculate the Repayment Capacity given various residuals and loan combinations.

   To calculate the various Repayment-Capitalization Rates, the following additional assumptions were made:

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(a) Farm Loan Board - It was assumed that long term financing would be available from this source using a loan amortized over 20 years with an annual interest rate of 11.5 percent.

(b) Bank & Other - It was assumed that short and intermediate term financing would be available. It was further assumed that a blend or composite repayment term of four (4) years with an annual interest rate of 16 percent (Amortized Loan) would be appropriate.

(c) Equity - Equity was not considered once the main thrust of this paper was to estimate repayment of principal and interest monies borrowed from business external to the farm business as opposed to total capitalization.

(d) Table 1 - This Table represents the Repayment-Capitalization Rates for various loan combinations.

6. DIRECTIONS FOR USE - In order to make use of the information contained in the following tables, several steps are involved. These include:

(a) Determine the Total Capital to be borrowed by the farm business.

(b) Determine the number of cows.

(c) Determine the ratio or percentage of these borrowed funds from (i) Farm Loan Board, and (ii) Bank or Other.

(d) Using this ratio, refer to Table 1 and determine the Repayment-Capitalization Rate.

(e) Using the Rate obtained from Table 1, select the appropriate production level Table, find the correct blend price to be received for milk and determine the amount of capital that can be repaid by the farm business.

7. EXAMPLE CALCULATION - A prospective farm family wishes to know if they can borrow $205,000. to purchase a 60 cow dairy farm. They wish to borrow $195,000. from the Farm Loan Board and the balance, $10,000. from the Bank. They estimate that the herd will produce 6,000 litres per cow per year and that the blend price for milk will be $43.00 per hectolitre.

   (a) Borrowings per Cow $\frac{\$205,000.}{60} = \$3,417.00$

   (b) Percentage of Borrowed Funds from:
      (i) Farm Loan Board - 95%
      (ii) Bank - 5%

   (c) Table 1 - Repayment-Capitalization Rate - 14.1

   (d) Borrowed Capital Limits from the 6,000 Litre Production Level Table at a blend price of $43.00 per hectolitre is $3,433.00.

   (e) Based on 60 cows, this prospective farm family could just meet debt obligations on their proposed farm purchase (assuming cost, returns, and borrowing patterns suggested).

8. EDITORS NOTE - The information contained in this paper is intended for use only as a guide. The information was not developed from random sample data - hence interpretation and use beyond that of a guide to budgeting is beyond the intention or scope of this paper.

TABLE 1

REPAYMENT - CAPITALIZATION RATE

FARM LOAN BOARD %	BANK FINANCED %																				
	~~0~~	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
100	13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95	-	14.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	-	-	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	-	-	-	16.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	-	-	-	-	17.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75	-	-	-	-	-	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	-	-	-	-	-	-	19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	-	-	-	-	-	-	-	20.7	-	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	-	-	-	-	-	21.8	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	22.9	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	24.0	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	25.1	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-	26.2	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	27.3	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.4	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29.5	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.6	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31.7	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.8	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33.9	-
~~0~~	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.0

4,000 LITRES PRODUCTION LEVEL

REPAY.-CAP. RATE %	PRICE/HL. 39.25	40.00	40.75	41.50	42.25	43.00	43.75	44.50	45.25	46.00	46.75
13.0	1885	1938	1992	2046	2100	2154	2208	2262	2323	2377	2431
14.1	1738	1787	1837	1887	1936	1986	2035	2085	2142	2191	2241
15.2	1612	1658	1704	1750	1796	1842	1888	1934	1987	2033	2079
16.3	1503	1546	1589	1632	1675	1718	1761	1804	1853	1896	1939
17.4	1408	1448	1489	1529	1569	1609	1649	1690	1736	1776	1816
18.5	1324	1362	1400	1438	1476	1514	1551	1589	1632	1670	1708
19.6	1250	1286	1321	1357	1393	1429	1464	1500	1541	1576	1612
20.7	1184	1217	1251	1285	1319	1353	1386	1420	1459	1493	1527
21.8	1123	1156	1188	1220	1252	1284	1317	1349	1385	1417	1450
22.9	1070	1100	1131	1162	1192	1222	1253	1284	1319	1349	1380
24.0	1021	1050	1079	1108	1138	1167	1196	1225	1258	1288	1317
25.1	976	1004	1032	1060	1088	1116	1143	1171	1203	1231	1259
26.2	935	962	989	1015	1042	1069	1095	1122	1153	1179	1206
27.3	897	923	949	974	1000	1026	1051	1077	1106	1132	1158
28.4	863	887	912	939	961	986	1011	1035	1063	1088	1113
29.5	831	854	878	902	925	949	973	997	1024	1047	1071
30.6	801	824	846	869	892	915	938	961	987	1010	1033
31.7	773	795	817	839	861	883	905	927	953	975	997
32.8	747	768	790	810	832	854	875	896	921	942	963
33.9	723	743	764	785	805	826	847	867	891	912	932
35.0	700	720	740	760	780	800	820	840	863	883	902

4,500 LITRES PRODUCTION LEVEL

REPAY.-CAP. RATE %	PRICE/HL. 39.25	40.00	40.75	41.50	42.25	43.00	43.75	44.50	45.25	46.00	46.75
13.0	2238	2300	2361	2431	2485	2546	2608	2677	2731	2792	2861
14.1	2064	2121	2177	2241	2291	2348	2404	2468	2518	2574	2638
15.2	1914	1967	2020	2079	2125	2178	2230	2289	2336	2388	2447
16.3	1785	1834	1883	1939	1982	2031	2080	2135	2178	2227	2282
17.4	1672	1718	1764	1816	1856	1902	1948	2000	2040	2086	2138
18.5	1573	1616	1659	1708	1746	1789	1832	1881	1919	1962	2011
19.6	1485	1526	1566	1612	1648	1689	1729	1776	1811	1852	1898
20.7	1406	1444	1483	1527	1560	1599	1638	1681	1715	1754	1797
21.8	1335	1372	1408	1450	1482	1518	1555	1596	1628	1665	1706
22.9	1271	1306	1341	1380	1410	1445	1480	1520	1550	1585	1624
24.0	1213	1246	1279	1318	1346	1379	1413	1450	1479	1513	1550
25.1	1159	1191	1223	1259	1287	1319	1351	1386	1414	1446	1482
26.2	1111	1141	1172	1206	1233	1263	1294	1328	1355	1385	1420
27.3	1066	1095	1125	1158	1183	1212	1242	1275	1300	1330	1362
28.4	1025	1053	1081	1113	1137	1165	1194	1225	1250	1278	1310
29.5	986	1014	1041	1071	1095	1122	1149	1180	1203	1231	1261
30.6	951	977	1003	1033	1056	1082	1108	1137	1160	1186	1216
31.7	918	943	968	997	1019	1044	1069	1098	1120	1145	1174
32.8	889	912	936	963	985	1009	1034	1061	1082	1107	1134
33.9	858	882	906	932	953	976	1000	1026	1047	1070	1097
35.0	831	854	877	903	923	946	969	994	1014	1037	1063

5,000 LITRES PRODUCTION LEVEL

REPAY.-CAP. RATE %	PRICE/HL. 39.25	40.00	40.75	41.50	42.25	43.00	43.75	44.50	45.25	46.00	46.75
13.0	2592	2669	2731	2800	2869	2938	3015	3079	3146	3215	3285
14.1	2390	2461	2518	2582	2645	2709	2780	2837	2901	2965	3028
15.2	2217	2283	2335	2395	2454	2513	2579	2632	2691	2750	2809
16.3	2067	2129	2178	2233	2288	2344	2405	2454	2509	2564	2620
17.4	1937	1994	2040	2092	2144	2195	2253	2299	2351	2402	2454
18.5	1822	1876	1919	1968	2016	2065	2119	2162	2211	2259	2308
19.6	1719	1770	1811	1857	1903	1949	2000	2041	2087	2133	2179
20.7	1628	1676	1715	1758	1802	1845	1894	1932	1996	2019	2063
21.8	1546	1592	1628	1670	1711	1752	1798	1835	1876	1917	1959
22.9	1472	1515	1550	1590	1629	1668	1712	1747	1786	1825	1865
24.0	1404	1446	1479	1517	1554	1592	1633	1667	1704	1742	1779
25.1	1343	1382	1414	1450	1486	1522	1562	1594	1629	1665	1701
26.2	1286	1324	1355	1389	1424	1458	1496	1527	1561	1595	1630
27.3	1234	1271	1300	1333	1366	1399	1436	1465	1498	1531	1564
28.4	1187	1222	1250	1282	1313	1345	1380	1408	1440	1472	1504
29.5	1142	1176	1203	1234	1264	1295	1329	1356	1386	1417	1447
30.6	1101	1134	1160	1190	1219	1248	1281	1307	1337	1366	1395
31.7	1063	1094	1120	1148	1177	1205	1237	1262	1290	1319	1347
32.8	1027	1058	1082	1110	1137	1165	1195	1220	1247	1274	1302
33.9	994	1023	1047	1074	1100	1127	1156	1180	1206	1233	1260
35.0	963	991	1014	1040	1066	1091	1120	1143	1169	1194	1220

5,500 LITRES PRODUCTION LEVEL

REPAY.-CAP. RATE %	PRICE/HL. 39.25	40.00	40.75	41.50	42.25	43.00	43.75	44.50	45.25	46.00	46.75
13.0	2954	3031	3108	3177	3262	3331	3408	3485	3561	3631	3708
14.1	2723	2794	2865	2929	3007	3071	3142	3213	3284	3348	3418
15.2	2526	2592	2658	2717	2789	2849	2914	2980	3046	3105	3171
16.3	2356	2417	2478	2534	2601	2656	2718	2779	2840	2896	2957
17.4	2207	2264	2322	2374	2437	2489	2546	2603	2661	2713	2770
18.5	2076	2130	2184	2232	2292	2341	2395	2449	2503	2551	2605
19.6	1959	2010	2061	2107	2163	2209	2260	2311	2362	2408	2459
20.7	1855	1903	1952	1995	2048	2092	2140	2188	2236	2280	2329
21.8	1761	1807	1853	1894	1945	1986	2032	2078	2124	2165	2211
22.9	1677	1721	1764	1803	1852	1891	1934	1978	2022	2061	2105
24.0	1600	1642	1683	1721	1767	1804	1846	1888	1929	1967	2008
25.1	1530	1570	1610	1645	1689	1725	1765	1805	1845	1880	1920
26.2	1466	1504	1542	1576	1618	1653	1691	1729	1767	1801	1840
27.3	1406	1443	1480	1513	1553	1586	1623	1659	1696	1729	1765
28.4	1352	1387	1422	1454	1493	1525	1560	1595	1630	1662	1697
29.5	1302	1336	1369	1400	1437	1468	1502	1536	1569	1600	1634
30.6	1255	1288	1320	1350	1386	1415	1448	1480	1513	1542	1575
31.7	1211	1243	1274	1303	1338	1366	1397	1429	1461	1489	1521
32.8	1171	1201	1232	1259	1293	1320	1351	1381	1412	1439	1470
33.9	1133	1162	1192	1218	1251	1277	1307	1336	1366	1392	1422
35.0	1097	1126	1154	1180	1211	1237	1266	1294	1323	1349	1377

6,000 LITRES PRODUCTION LEVEL

REPAY.-CAP. RATE %	PRICE/HL. 39.25	40.00	40.75	41.50	42.25	43.00	43.75	44.50	45.25	46.00	46.75
13.0	3315	3392	3477	3562	3638	3723	3807	3892	3969	4054	4131
14.1	3057	3127	3205	3284	3355	3432	3510	3589	3660	3738	3808
15.2	2835	2901	2974	3046	3119	3184	3257	3329	3395	3467	3533
16.3	2644	2706	2773	2840	2902	2969	3037	3104	3166	3233	3294
17.4	2477	2534	2598	2661	2718	2781	2845	2908	2966	3029	3086
18.5	2330	2384	2443	2503	2557	2616	2676	2735	2789	2849	2903
19.6	2199	2250	2306	2362	2413	2469	2525	2582	2632	2689	2740
20.7	2082	2130	2184	2237	2285	2338	2391	2444	2493	2546	2594
21.8	1977	2023	2073	2124	2170	2220	2271	2321	2367	2417	2463
22.9	1882	1926	1974	2022	2066	2114	2162	2210	2253	2301	2345
24.0	1796	1838	1883	1929	1971	2017	2063	2108	2150	2196	2238
25.1	1717	1757	1801	1845	1884	1928	1972	2016	2056	2100	2139
26.2	1645	1683	1725	1767	1805	1847	1889	1931	1969	2011	2050
27.3	1579	1615	1656	1696	1733	1773	1813	1853	1890	1930	1967
28.4	1518	1553	1592	1630	1665	1704	1743	1782	1817	1856	1891
29.5	1461	1495	1532	1569	1603	1641	1678	1715	1749	1786	1820
30.6	1408	1441	1477	1513	1546	1582	1618	1653	1686	1722	1755
31.7	1360	1391	1426	1460	1492	1527	1561	1596	1628	1662	1694
32.8	1314	1344	1378	1412	1442	1476	1509	1543	1573	1607	1637
33.9	1271	1301	1333	1366	1395	1428	1460	1493	1522	1555	1584
35.0	1231	1260	1291	1323	1351	1383	1414	1446	1474	1506	1534

6,500 LITRES PRODUCTION LEVEL

REPAY.-CAP. RATE %	PRICE/HL. 39.25	40.00	40.75	41.50	42.25	43.00	43.75	44.50	45.25	46.00	46.75
13.0	3669	3762	3854	3938	4023	4115	4208	4300	4377	4469	4562
14.1	3383	3468	3553	3631	3709	3794	3879	3965	4035	4121	4206
15.2	3138	3217	3296	3368	3441	3520	3599	3678	3743	3822	3901
16.3	2926	3000	3074	3141	3209	3282	3356	3429	3491	3564	3638
17.4	2741	2810	2879	2943	3006	3074	3144	3213	3270	3339	3408
18.5	2578	2643	2708	2768	2827	2892	2957	3022	3076	3141	3205
19.6	2434	2495	2556	2612	2668	2729	2791	2852	2903	2964	3026
20.7	2304	2362	2420	2473	2527	2585	2643	2700	2749	2807	2865
21.8	2188	2243	2298	2349	2399	2454	2509	2564	2610	2665	2720
22.9	2083	2135	2187	2236	2284	2336	2389	2441	2485	2537	2590
24.0	1988	2038	2088	2133	2179	2229	2279	2329	2371	2421	2471
25.1	1900	1948	1996	2040	2083	2131	2179	2227	2267	2314	2363
26.2	1821	1866	1912	1954	1996	2042	2088	2134	2172	2217	2263
27.3	1747	1791	1835	1875	1916	1960	2004	2048	2084	2128	2172
28.4	1574	1722	1764	1803	1842	1884	1926	1968	2003	2046	2088
29.5	1617	1658	1698	1736	1773	1814	1854	1895	1929	1969	2010
30.6	1559	1598	1637	1673	1709	1748	1788	1827	1859	1899	1938
31.7	1505	1542	1580	1615	1650	1688	1726	1763	1795	1833	1870
32.8	1454	1491	1527	1561	1594	1631	1668	1704	1735	1771	1808
33.9	1407	1442	1478	1510	1543	1578	1614	1649	1678	1714	1749
35.0	1363	1397	1431	1463	1494	1528	1563	1597	1626	1660	1694

7,000 LITRES PRODUCTION LEVEL

REPAY.-CAP. RATE %	PRICE/HL. 39.25	40.00	40.75	41.50	42.25	43.00	43.75	44.50	45.25	46.00	46.75
13.0	4031	4123	4223	4315	4415	4508	4600	4700	4792	4892	4985
14.1	3716	3801	3894	3979	4071	4156	4241	4333	4418	4511	4596
15.2	3447	3526	3612	3691	3776	3855	3934	4020	4099	4184	4263
16.3	3215	3288	3368	3442	3521	3595	3669	3748	3822	3902	3975
17.4	3011	3080	3155	3224	3299	3368	3437	3511	3580	3655	3724
18.5	2832	2897	2968	3032	3103	3167	3232	3303	3368	3438	3503
19.6	2673	2735	2801	2862	2929	2990	3051	3117	3179	3245	3306
20.7	2531	2589	2652	2710	2773	2831	2889	2952	3010	3072	3130
21.8	2404	2459	2518	2573	2633	2688	2743	2803	2858	2917	2972
22.9	2288	2341	2397	2450	2506	2559	2611	2668	2721	2777	2829
24.0	2183	2233	2288	2337	2392	2442	2492	2546	2596	2650	2700
25.1	2088	2135	2187	2235	2287	2335	2382	2434	2482	2534	2581
26.2	2000	2046	2095	2141	2191	2237	2282	2332	2378	2427	2473
27.3	1919	1963	2011	2055	2102	2146	2190	2238	2282	2330	2374
28.4	1845	1887	1933	1975	2021	2063	2106	2151	2194	2239	2282
29.5	1776	1817	1861	1902	1946	1986	2027	2071	2112	2156	2197
30.6	1712	1752	1794	1833	1876	1915	1954	1997	2036	2078	2118
31.7	1653	1691	1732	1770	1811	1849	1886	1927	1965	2006	2044
32.8	1598	1634	1674	1710	1750	1787	1823	1863	1899	1939	1976
33.9	1546	1581	1619	1655	1693	1729	1764	1802	1838	1876	1912
35.0	1497	1531	1569	1603	1640	1674	1709	1746	1780	1817	1851